Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A conductive polymer composition comprising:

about 0.01% to about 5% by weight of a transition metal catalyst;

an electrically conductive material; and

a polymer binder blend comprising a first polymer ~~or first polymer mixture, wherein said first polymer or polymers comprising the first polymer mixture have characteristic glass transition temperatures (Tg),~~ and a second polymer ~~having a characteristic Tg~~, wherein the first polymer and the second polymer are selected from the group consisting of: acrylic homopolymers, acrylic copolymers, and acrylic terpolymers, wherein the ~~Tg~~ glass transition temperature of said first polymer ~~or at least one of the polymers comprising the first polymer mixture~~ is higher than the ~~Tg~~ glass transition temperature of said second polymer, ~~with the proviso that when, in a polymer binder blend,~~ the first polymer, ~~or any polymer of the first polymer mixture,~~ and the second polymer ~~are the same copolymer, with~~ having different molecular weights~~., neither (i) the first polymer, or any polymer of the first polymer mixture, nor (ii) the second polymer comprise styrene, alkyl styrene, cycloaklystyrene or hydroxystyrene monomers.~~

2. (Currently Amended) The composition of claim 1, wherein said polymer binder blend ~~consists essentially of the first polymer and the second polymer~~comprises acrylic homopolymers prepared from polymerized monomers selected from the group consisting of: methyl methacrylate, ethyl methacrylate, tert-butyl methacrylate, butyl methacrylate, isobutyl methacrylate, propyl methacrylate, 2-ethylhexyl methacrylate, isoamyl methylacrylate, and octyl methacrylate.

3. (Currently Amended) The composition of claim ~~2~~1, wherein ~~said second~~ the first polymer is ~~an acrylic polymer, copolymer, or terpolymer~~poly (methyl methacrylate) and the second polymer is poly (methyl methacrylate).

4. (Currently Amended) The composition of claim ~~1~~3, wherein a ratio said first polymer, or said first polymer mixture, and said second polymer, based on the total weight of polymers in the polymer binder blend is from 80:20 to 40:60 ~~comprise thermoplastic polymers~~.

5. (Original) The composition of claim 1, wherein the transition metal catalyst is selected from the group consisting of platinum, palladium, and rhodium.

6. (Original)The composition of claim 1, wherein the catalyst comprises platinum on graphite.

7. (Currently Amended) The composition of claim 1, wherein said ~~first~~ polymer~~, or polymers comprising the first polymer mixture,~~binder blend is ~~selected from the group consisting~~ a 50:50 blend of poly (methyl methacrylate),~~ PMMA; poly (styrene methyl methacrylate), PSMMA; poly (styrene acylonitrile), SAN; and poly (acylonitrile butadiene styrene), ABS~~homopolymers.

8. (Currently Amended) The composition of claim ~~5~~1, wherein said ~~second~~ polymer binder blend comprises acrylic copolymers prepared from polymerized monomers is selected from the group consisting of: acrylic acid, methacrylic acid, methyl methacrylate, ethyl methacrylate, propyl methacrylate, isopropyl methacrylate, hexyl methacrylate, 2-ethylhexyl methacrylate, nonyl methacrylate, lauryl methacrylate, stearyl methacrylate, isodecyl methacrylate, ethyl acrylate, methyl acrylate, propyl acrylate, isopropyl acrylate, butyl acrylate, isobutyl acrylate, hexyl acrylate, 2-ethylhexyl acrylate, nonyl acrylate, lauryl acrylate, stearyl acrylate, isodecyl acrylate, ethylene methacrylate, propylene methacrylate, isopropylene methacrylate, butane methacrylate, isobutylene methacrylate, hexene methacrylate, 2-ethylhexene methacrylate, nonene methacrylate, isodecene methacrylate, cyclopentyl acrylate, 4-methyl cyclohexyl acrylate, benzyl methacrylate, o-bromobenzyl methacrylate, phenyl methacrylate, nonylphenyl methacrylate, benzyl acrylate, phenoxy methacrylate, benzyl acrylate, phenyl acrylate, o-bromobenzyl acrylate, nonylphenyl acrylate, phenethyl methacrylate, phenoxyl methacrylate, phenylpropyl methacrylate, nonylphenylethyl methacrylate, phenethyl acrylate, phenoxyl acrylate, phenylpropyl acrylate, nonylphenylethyl acrylate, 2-ethoxyethoxymethyl methacrylate, ethoxyethoxyethyl methacrylate, 2-ethoxyethoxymethyl acrylate, ethoxyethoxyethyl acrylate, glycido methacrylate, 2,3-epoxybutyl methacrylate, 2,3-epoxybutyl acrylate, 3,4-epoxybutyl acrylate, 3,4-epoxybutyl methacrylate, 2,3-epoxypropyl methacrylate, 2,3-epoxypropyl

acrylate, 2-methoxyethyl methacrylate, 2-ethoxyethyl methacrylate, 2-butoxyethyl methacrylate, 2-methoxyethyl acrylate, 2-ethoxyethyl acrylate, 2-butoxyethyl acrylate, tetrahydrofurfuryl methacrylate, tetrahydrofurfuryl acrylate, ethoxylated bisphenyl-A-dimethylacrylate, ethylene glycol diacrylate, 1,2-propane diol diacrylate, 1,3-propane diol diacrylate, 1,2-propane diol dimethacrylate, 1,3-propane diol dimethacrylate, 1,4-butane diol diacrylate, 1,3-butane diol dimethacrylate, 1,4-butane diol dimethacrylate, 1,5-pentane diol diacrylate, 2,5-methyl-1,6-hexane diol dimethacrylate, diethylene glycol diacrylate, diethylene glycol dimethacrylate, trimethylol propane trimethacrylate tetraethylene glycol diacrylate, tetraethylene glycol dimethacrylate, dipropylene glycol dimethacrylate, trimethylol propyl triacrylate, glycerol triacrylate, glycerol trimethacrylate, pentaerythritol triacrylate, pentaerythritol tetraacrylate, and pentaerythritol tetramethacrylate. ~~poly (methyl methacrylate), PMMA; poly (styrene methyl methacrylate), PSMMA; poly (styrene acylonitrile), SAN; and poly (acylonitrile butadiene styrene), ABS.~~

9. (Currently Amended) The composition of claim 1, wherein said polymer binder blend comprises ~~a first polymer mixture and said second polymer comprises an acrylic polymer, copolymer, or terpolymer.~~acrylic terpolymers prepared from monomers selected from the group consisting of: methyl methacrylate, ethyl methacrylate, propyl methacrylate, isopropyl methacrylate, hexyl methacrylate, 2-ethylhexyl methacrylate, nonyl methacrylate, lauryl methacrylate, stearyl methacrylate, isodecyl methacrylate, ethyl acrylate, methyl acrylate, propyl acrylate, isopropyl acrylate, butyl acrylate, isobutyl acrylate, hexyl acrylate, 2-ethylhexyl acrylate, nonyl acrylate, lauryl acrylate, stearyl acrylate, isodecyl acrylate, ethylene methacrylate, propylene methacrylate, isopropylene methacrylate, butane methacrylate, isobutylene methacrylate, hexene methacrylate, 2-ethylhexene methacrylate, nonene methacrylate, isodecene methacrylate, cyclopentyl acrylate, 4-methyl cyclohexyl acrylate, benzyl methacrylate, o-bromobenzyl methacrylate, phenyl methacrylate, nonylphenyl methacrylate, benzyl acrylate, phenoxy methacrylate, benzyl acrylate, phenyl acrylate, o-bromobenzyl acrylate, nonylphenyl acrylate, phenethyl methacrylate, phenoxyl methacrylate, phenylpropyl methacrylate, nonylphenylethyl methacrylate, phenethyl acrylate, phenoxyl acrylate, phenylpropyl acrylate, nonylphenylethyl acrylate, 2-ethoxyethoxymethyl methacrylate, ethoxyethoxyethyl methacrylate, 2-ethoxyethoxymethyl acrylate, ethoxyethoxyethyl acrylate, glycido methacrylate, 2,3-epoxybutyl methacrylate, 2,3-epoxybutyl acrylate, 3,4-epoxybutyl acrylate, 3,4-epoxybutyl methacrylate, 2,3-epoxypropyl methacrylate, 2,3-epoxypropyl acrylate, 2-methoxyethyl methacrylate, 2-ethoxyethyl methacrylate, 2-butoxyethyl

methacrylate, 2-methoxyethyl acrylate, 2-ethoxyethyl acrylate, 2-butoxyethyl acrylate, tetrahydrofurfuryl methacrylate, tetrahydrofurfuryl acrylate, ethoxylated bisphenyl-A-dimethylacrylate, ethylene glycol diacrylate, 1,2-propane diol diacrylate, 1,3-propane diol diacrylate, 1,2-propane diol dimethacrylate, 1,3-propane diol dimethacrylate, 1,4-butane diol diacrylate, 1,3-butane diol dimethacrylate, 1,4-butane diol dimethacrylate, 1,5-pentane diol diacrylate, 2,5-methyl-1,6-hexane diol dimethacrylate, diethylene glycol diacrylate, diethylene glycol dimethacrylate, trimethylol propane trimethacrylate tetraethylene glycol diacrylate, tetraethylene glycol dimethacrylate, dipropylene glycol dimethacrylate, trimethylol propyl triacrylate, glycerol triacrylate, glycerol trimethacrylate, pentaerythritol triacrylate, pentaerythritol tetraacrylate, and pentaerythritol tetramethacrylate.

10. (Currently Amended) The composition of claim ~~9~~1, wherein the polymer binder blend comprises acrylic polymers, copolymers, or terpolymers (i) ~~is~~that are hydrophilic and (ii) ~~comprises~~ are prepared from polymerized acrylic acid monomers that comprise additional hydrophilic functional groups on the alpha-carbon of the acrylic acid backbone, beta-carbon of the acrylic acid backbone, the pendant carboxyl-group on the alpha-carbon of the acrylic acid backbone, or combinations thereof.

11. (Original) The composition of claim 1, wherein the conductive material is selected from the group consisting of synthetic graphite, pyrolytic graphite, and natural graphite.

12. (Original) An electrode comprising the conductive polymer composition of claim 1 on a non-conducting substrate.

13. (Currently Amended) A conductive polymer composition comprising:

about 0.01% to about 5% by weight of a transition metal catalyst;

an electrically conductive material; and

a polymer binder blend comprising a ~~hydrophilic, acrylic polymer, copolymer, or terpolymer~~ first polymer mixture and a second polymer, wherein the first polymer mixture is a mixture of acrylic homopolymers having different glass transition temperatures and different molecular weights and the second polymer is selected from the group consisting of acrylic copolymers and acrylic terpolymers.

14. (Currently Amended) The composition of claim 13, wherein the ~~hydrophilic, acrylic polymer, copolymer, or terpolymer comprises acrylic acid monomers comprising additional hydrophilic functional groups on the .alpha. carbon of the acrylic acid backbone, .beta. carbon of the acrylic acid backbone, the pendant carboxyl group on the .alpha. carbon of the acrylic acid backbone, or combinations thereof~~first polymixture is a mixture of poly (methyl methacrylate) homopolymers and the second polymer is selected from the group consisting of: styrene, methyl methacrylate, ethyl methacrylate, propyl methacrylate, isopropyl methacrylate, hexyl methacrylate, 2-ethylhexyl methacrylate, nonyl methacrylate, lauryl methacrylate, stearyl methacrylate, isodecyl methacrylate, ethyl acrylate, methyl acrylate, propyl acrylate, isopropyl acrylate, butyl acrylate, isobutyl acrylate, hexyl acrylate, 2-ethylhexyl acrylate, nonyl acrylate, lauryl acrylate, stearyl acrylate, isodecyl acrylate, ethylene methacrylate, propylene methacrylate, isopropylene methacrylate, butane methacrylate, isobutylene methacrylate, hexene methacrylate, 2-ethylhexene methacrylate, nonene methacrylate, isodecene methacrylate, cyclopentyl acrylate, 4-methyl cyclohexyl acrylate, benzyl methacrylate, o-bromobenzyl methacrylate, phenyl methacrylate, nonylphenyl methacrylate, benzyl acrylate, phenoxy methacrylate, benzyl acrylate, phenyl acrylate, o-bromobenzyl acrylate, nonylphenyl acrylate, phenethyl methacrylate, phenoxyl methacrylate, phenylpropyl methacrylate, nonylphenylethyl methacrylate, phenethyl acrylate, phenoxyl acrylate, phenylpropyl acrylate, nonylphenylethyl acrylate, 2-ethoxyethoxymethyl methacrylate, ethoxyethoxyethyl methacrylate, 2-ethoxyethoxymethyl acrylate, ethoxyethoxyethyl acrylate, glycido methacrylate, 2,3-epoxybutyl methacrylate, 2,3-epoxybutyl acrylate, 3,4-epoxybutyl acrylate, 3,4-epoxybutyl methacrylate, 2,3-epoxypropyl methacrylate, 2,3-epoxypropyl acrylate, 2-methoxyethyl methacrylate, 2-ethoxyethyl methacrylate, 2-butoxyethyl methacrylate, 2-methoxyethyl acrylate, 2-ethoxyethyl acrylate, 2-butoxyethyl acrylate, tetrahydrofurfuryl methacrylate, tetrahydrofurfuryl acrylate, ethoxylated bisphenyl-A-dimethylacrylate, ethylene glycol diacrylate, 1,2-propane diol diacrylate, 1,3-propane diol diacrylate, 1,2-propane diol dimethacrylate, 1,3-propane diol dimethacrylate, 1,4-butane diol diacrylate, 1,3-butane diol dimethacrylate, 1,4-butane diol dimethacrylate, 1,5-pentane diol diacrylate, 2,5-methyl-1,6-hexane diol dimethacrylate, diethylene glycol diacrylate, diethylene glycol dimethacrylate, trimethylol propane trimethacrylate tetraethylene glycol diacrylate, tetraethylene glycol dimethacrylate, dipropylene glycol dimethacrylate, trimethylol propyl triacrylate, glycerol triacrylate, glycerol trimethacrylate, pentaerythritol triacrylate, pentaerythritol tetraacrylate, and pentaerythritol tetramethacrylate.

15. (Original) The composition of claim 13, wherein the transition metal catalyst is selected from the group consisting of platinum, palladium, and rhodium.

16. (Original) The composition of claim 13, wherein the catalyst comprises platinum on graphite.

17. (Currently Amended) The composition of claim 13, wherein said second polymer is selected from the group consisting of: ~~a hydrophilic, acrylic copolymer or terpolymer comprising acrylate and/or alkylacrylate monomers comprising functional groups selected from the group consisting of amino, hydroxy, and carboxy~~ hydroxyl alkyl acrylate, hydroxyl alkyl methacrylate, acrylic acid, methacrylic acid, carboxyalkyl acrylate, aminoalkyl acrylate, aminoalkyl methacrylate, 2-hydroxyethyl acrylate, 2-hydroxypropyl acrylate, 3-hydroxypropyl acrylate, 4-hydroxybutyl acrylate, 3,4-dihydroxybutyl acrylate, 2-hydroxyethyl methacrylate, 2-hydroxypropyl ethacrylate, 3-hydroxypropyl methacrylate, 4-hydroxybutyl methacrylate, 3,4-dihydroxybutyl methacrylate, carboxymethyl acrylate, 2-carboxyethyl acrylate, 2-carboxypropyl acrylate, 3-carboxypropyl acrylate, 4-carboxybutyl acrylate, carboxymethyl methacrylate, 2-carboxyethyl methacrylate, 3-carboxypropyl methacrylate, and 4-carboxybutyl methacrylate, ortho substituted aminophenyl acrylate, meta substituted aminophenyl acrylate, para substituted aminophenyl acrylate, amino phenethyl acrylate, amino phenheptyl acrylate, p-amino phenoxy acrylate, 2-(dimethyl amino)ethyl acrylate, 2-(diethylamino) acrylate, 3-(diethylamino)-propyl acrylate, 2-t-butylaminoethyl acrylate, N,N-dibutylaminoethyl acrylate, 2-t-octylaminoethyl acrylate, 7-amino-3,4-dimethyloctyl acrylate, ortho substituted aminophenyl methacrylate, meta substituted aminophenyl methacrylate, para substituted aminophenyl methacrylate, amino phenethyl methacrylate, amino phenheptyl methacrylate, p-amino phenoxy methacrylate, 2-(dimethyl amino)ethyl methacrylate, 2-(diethylamino) methacrylate, 3-(diethylamino)-propyl methacrylate, 2-t-butylaminoethyl methacrylate, N,N-dibutylaminoethyl methacrylate, 2-t-octylaminoethyl methacrylate, 7-amino-3,4-dimethyloctyl methacrylate, vinylamine substituted acrylate, vinylamine substituted alkyl acrylate, vinylamine acrylates, N,N-dimethylvinylamine acrylates, N,N-diethylvinylamine acrylates, N-methyl-N-phenylvinylamine acrylates, and N,N-diphenylvinylamine acrylates.

18. (Currently Amended) The composition of claim ~~17~~13, wherein ~~the~~a ratio of the first polymer mixture to the second polymer is from 80:20 to 40:60, based on the total weight of the

polymers in the polymer binder blend. ~~copolymer or terpolymer comprises about 0% to about 99% weight, based on the total weight of said copolymer or terpolymer, of moieties resulting from the polymerization of monomers comprising the functional groups with other monomers free of hydroxy, carboxy, and amino functional groups to form copolymers or terpolymers.~~

19. (Original) The composition of claim 13, wherein the conductive material is selected from the group consisting of synthetic graphite, pyrolytic graphite, and natural graphite.

20. (Original) An electrode comprising the conductive polymer composition of claim 13 on a non-conducting substrate.

21. (New) A conductive polymer composition comprising:

about 0.01% to about 5% by weight of a transition metal catalyst;

an electrically conductive material; and

a polymer binder comprising acrylic copolymers or acrylic terpolymer prepared by polymerizing monomers selected from the group consisting of: alkyl acrylates, alkyl methacrylates, hydroxyl-alkyl acrylates, hydroxyl-alkyl methacrylates, acrylic acid, methacrylic acid, carboxyl alkyl acrylates, carboxyl methacrylates, amino alkylate acrylate, amino alkyl methacrylate, vinylamine acrylate and vinyl amine alkyl acrylate.